**Class Period: \_\_\_\_\_\_\_\_\_ Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**VSEPR Modeling Lab**

**Supplies per group:**

13 gumdrops (dots) 26 colored mini-marshmallows 60 toothpicks

1 sandwich baggie 45 white mini-marshmallows

**Preparation:**

If you desire to eat the gumdrops and marshmallows after the lab, wash your hands before starting and place paper towels on your desktop to work on.

**Procedure:**

Make three dimensionally correct models of the 13 possible VSEPR compound shapes. This means not only do the angles need to be correct from top to bottom and left to right, but also from front to back.

A gumdrop represents the center atom (E). Toothpicks represent bonds (lines or triangles). Two colored mini-marshmallows next to each other represent a lone pair, and a single white mini-marshmallow represents an outside atom (X)

After all 13 models have been built (there will be a few extra gumdrops and marshmallows) and are lined up in order, have your teacher check them off the list below. Only after they have all been checked off can you eat the materials.

As time allows, you may get extra credit by matching the compounds at the bottom with its VSEPR shape.

|  |  |  |  |
| --- | --- | --- | --- |
| **Check-off** | **E.G.** | **M.G.** | **Matching Compound**  **(from below)** |
|  | linear | linear |  |
|  | trigonal planar | trigonal planar |  |
|  | trigonal planar | angular or bent |  |
|  | tetrahedral | tetrahedral |  |
|  | tetrahedral | trigonal pyramidal |  |
|  | tetrahedral | angular or bent |  |
|  | trigonal bipyramidal | trigonal bipyramidal |  |
|  | trigonal bipyramidal | irregular tetrahedral |  |
|  | trigonal bipyramidal | T-shaped |  |
|  | trigonal bipyramidal | linear |  |
|  | octahedral | octahedral |  |
|  | octahedral | square pyramidal |  |
|  | octahedral | square planar |  |

SnCl3- AsO4-3 SnCl6-2 ClBr3 IF4-

GaBr3 BeI2 PBr5 SI4 KrCl2